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Knowledge and awareness regarding medication usage in pregnant women at a tertiary care hospital in Northern India

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ABSTRACT

Background

Medication usage during pregnancy can have negative effects on the fetus, especially in the first trimester when organogenesis is occurring. Thus, it is important to carefully assess whether pregnant women should take certain medications. The purpose of the current study was to assess public awareness of drug use during pregnancy.

Methodology

This is a prospective, observational, cross-sectional study with a sample of 400 randomly chosen pregnant women who were patients at a tertiary care facility in Rohtak, Haryana, India. A pre-designed, pre-validated 16-question semi-structured questionnaire was used to collect the data.

Results

The participants' average age was 25.7±2.68 years. Only 78 % of respondents recognized that medicines might be dangerous during pregnancy, whereas 82% were aware that they could be helpful. Only 33% of people knew that drugs may harm both the mother and the fetus, while 70% were aware that drugs could harm the fetus. About 20% each of women did not regularly take their medications, did not receive recommended immunizations, and were not aware of the importance of prenatal check-ups.

Conclusion

Pregnant women are not sufficiently aware of the risks associated with drug usage during pregnancy. So, there is a need for educating and counselling women of childbearing age to ensure safety of pharmaceuticals usage during pregnancy thus avoiding harmful effects to the fetus and also maintaining maternal health.

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INTRODUCTION

Pregnancy is a physiological phenomenon that can result in immediate or long-term health issues [1]. Using medicines irrationally and without a prescription is a very widespread habit everywhere in the world. Moreover, certain drugs can easily cross the placenta and can cause harm to the fetus [2]. Pregnant women and healthcare professionals alike are very concerned about the safety of medication use during pregnancy. Pre-marketing studies do not include pregnant participants, so maternal and fetal risks of medications are largely unknown prior to marketing [3]. Therefore, taking medications while pregnant has the potential to harm the fetus, especially during the first trimester when organogenesis is taking place. Several medications are prescribed to pregnant women to treat a variety of conditions, particularly those specifically related to pregnancy [4]. Numerous medications are recommended during pregnancy depending on the condition and symptoms, such as hypothyroidism, different infections, hypertension, fever of unknown origin, gastric acidity, nausea, and emesis. During pregnancy, self-medication is also prevalent. According to research, pregnant women take a lot of over-the-counter drugs, especially during the first trimester, when organogenesis is taking place [5]. Additionally, it has been shown that women who are pregnant take herbal medicines. This is due to the fact that pregnant women are not aware of how drugs affect developing foetuses [6]. Pregnant women and healthcare professionals alike are very concerned about the safety of medication use during pregnancy. Pre-marketing studies do not include pregnant participants, so maternal and foetal risks of medications are largely unknown prior to marketing [3]. As a result, careful consideration of pregnant mothers' drug intake is necessary. Recognition of thalidomide as the cause of phocomelia in the 1960s [7] and the teratogenic effects discovered, related to the use of diethylstilboestrol in 1971 raised the awareness about drugs prescribed during pregnancy [8]. These events led the US FDA to establish strict regulations about demonstrations on safety and efficacy of any drug in pregnancy before it became commercially available and provide information about that on drug labelling [9]. Due to ethical considerations, the assessment of the impact of medications on the developing foetus prior to their market release poses significant challenges, resulting in limited recommendations for drug utilization during pregnancy [10]. Supplementary drugs like iron, folic acid, calcium, vitamins are prescribed to pregnant mothers which help in prevention of maternal and child mortality and morbidity [11]. Thus, the use of drugs during pregnancy should preferably be avoided except haematinics i.e. iron, folic acid and certain vitamins [12-16]. Since the consequences of the drug used during pregnancy may be serious and cause disability and burden to the family which may be lifelong [17]. Self-medication is common during pregnancy. Data from studies indicate that pregnant women consume a lot of over-the-counter medications, especially in the first trimester when organogenesis is occurring [18, 19]. It has also been reported that pregnant women use herbal medications [20, 21]. This is because pregnant women are unaware of the effects of drugs on foetus. For healthy maternal and child health, adequate information, a positive attitude, and awareness regarding drug use are essential requirements. The goal of the current study was to evaluate pregnant women's knowledge and awareness of drug usage and their understanding of how drugs affect the developing foetus.

Material and Methods

The study was done by the Department of Pharmacology in collaboration with Department of obstetrics and gynaecology ,in antenatal clinic at Pt. B D Sharma, PGIMS, Rohtak, which is one of the major tertiary care hospitals in northern India. This was a prospective, observational, cross-sectional study. This survey included 400 randomly selected pregnant females attending antenatal clinics in the Department of Obstetrics and Gynaecology. Pregnant females irrespective of their age were included in the study. For data collection and management, all four hundred participants were interviewed. A structured, pre-validated and pre-tested questionnaire composed of 16 questions was used to collect the information. The pre-test was done on 10 participants who were excluded from the study. It was prepared in English and then translated to the local language. The participants were selected by systematic random sampling and every fifth participant was taken for the data collection. Data were collected by the investigator using questionnaire. Questionnaire includes information

about demographics, did they take medication during pregnancy and source of medication, knowledge as well as awareness about importance of drugs in pregnancy and about side effects of medicine in pregnancy to mother and foetus, compliance about prenatal checkup and immunisation. The questionnaire is given in Appendix 1.

Appendix 1

Questionnaire:
I] Demographic information
Age, weight, name, address, occupation, and family size.
Groups of apparent income include: Low, Middle, and High.
II] Obstetrics Background-Parity: Trimester: Grade Point Average:
III] Ailments associated with pregnancy: a) H/O any prior illness; b) Pregnancy-related illnesses.
[Questionnaire IV]
1. Are you a medicine user?
2. What illness are you now medicated for?
3. Which medications did you take before becoming pregnant and continue to take while you were pregnant?
4. Which medications did you begin taking while pregnant?
5. Source of medication you began taking while pregnant?
a. Physician B. Pharmacist/nurse c. Friends and family members d. Self-knowledge
6. Do you believe that using drugs while pregnant can be beneficial?
7. Which drugs are helpful?
8. Do you believe that consuming drugs in pregnancy is: Always safe; perhaps dangerous; or not known?
9. Are you aware that consuming drugs without the physician's instruction can harm the foetus?
10. Are you aware that drug use without the right supervision might have negative effects on mothers as well?
11. Are you aware that using drugs improperly can harm both the mother and the foetus?
12. Are you aware that it is required to get regular prenatal check-ups?
13. Are you aware that pregnancy necessitates immunization?
14. Which vaccination is routinely administered to all pregnant women, and when?
15. Have you have the recommended vaccinations from your doctor?
16. Have you followed your doctor's directions about medication and vaccinations?

After interviewing, mothers were advised to make 8 antenatal visits to hospital starting from first trimester and to have folic acid along with balanced diet and light exercise. Detailed advise given to pregnant females is given in Appendix 2.

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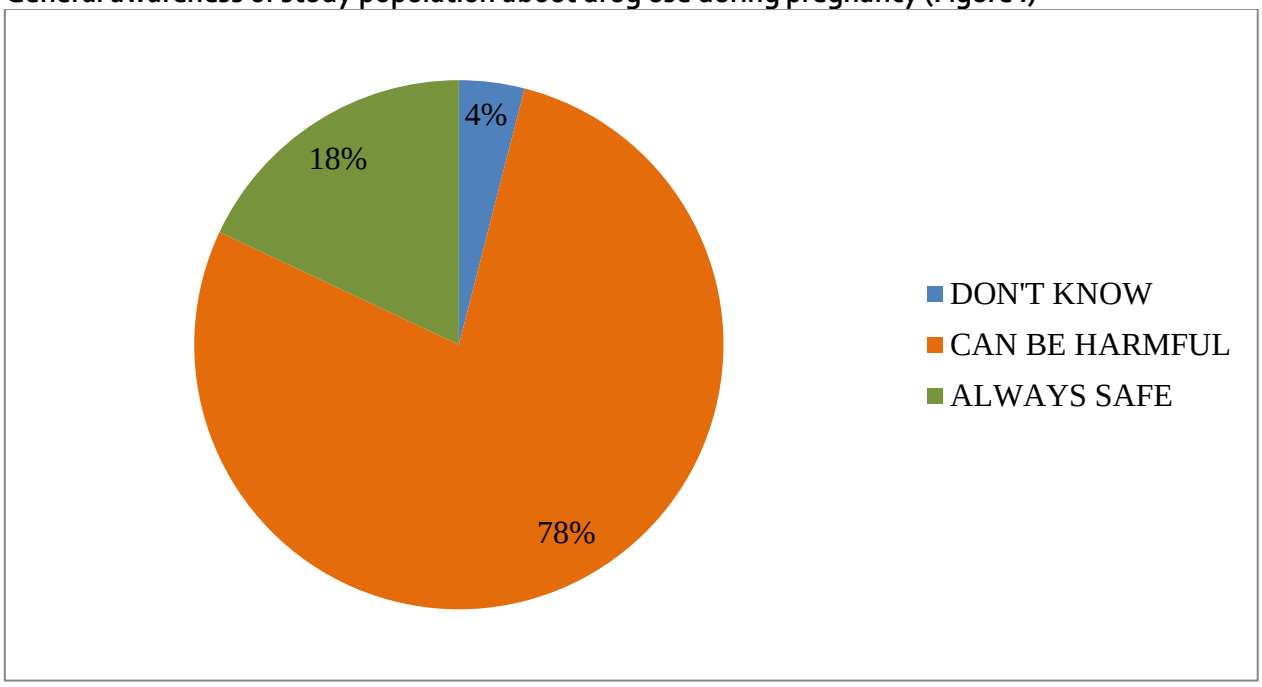
Appendix 2

Advice for expectant mothers:
1. It is advised that patients make at least eight visits to the doctor to lower perinatal mortality.
2. First interaction with pregnant women should occur within the first 12 weeks of gestation, and further at 20, 26, 30, 34, 36, 38, and 40 weeks.
3. Intake of balanced, healthy diet.
4. Walking or doing yoga as physical activity during pregnancy
5. Pregnant women should take 400 g (0.4 mg) of folic acid daily together with 30 mg to 60 mg of elemental iron to prevent maternal anaemia, puerperal sepsis, low birth weight, and premature birth from the second trimester onwards.
6. Maintain good hygiene
7. Depending on prior exposure to the tetanus vaccine, tetanus toxoid vaccination is advised for all pregnant women to reduce tetanus-related neonatal death.
8. Pregnant women are advised to have one early ultrasound before 24 weeks of gestation.
9. Avoid drinking and using other drugs.
10. Quit smoking.

As it is a questionnaire based non-interventional study, this study has been granted an exemption by ethics committee. All the participants were taken informed consent from before enrolling. Data was entered and analysed in SPSS software. Results were represented in the form of percentages and figures.

General awareness of study population about drug use during pregnancy (Figure I)



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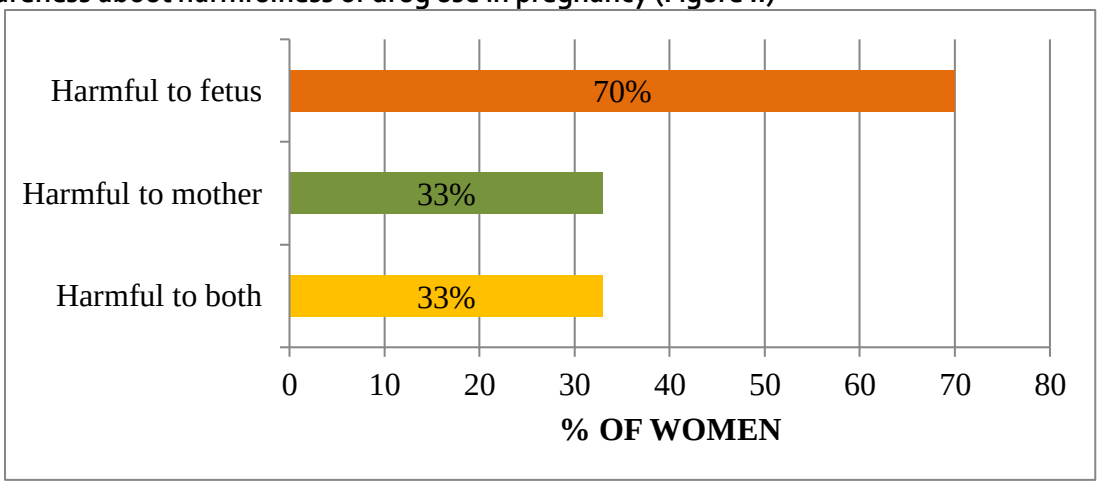
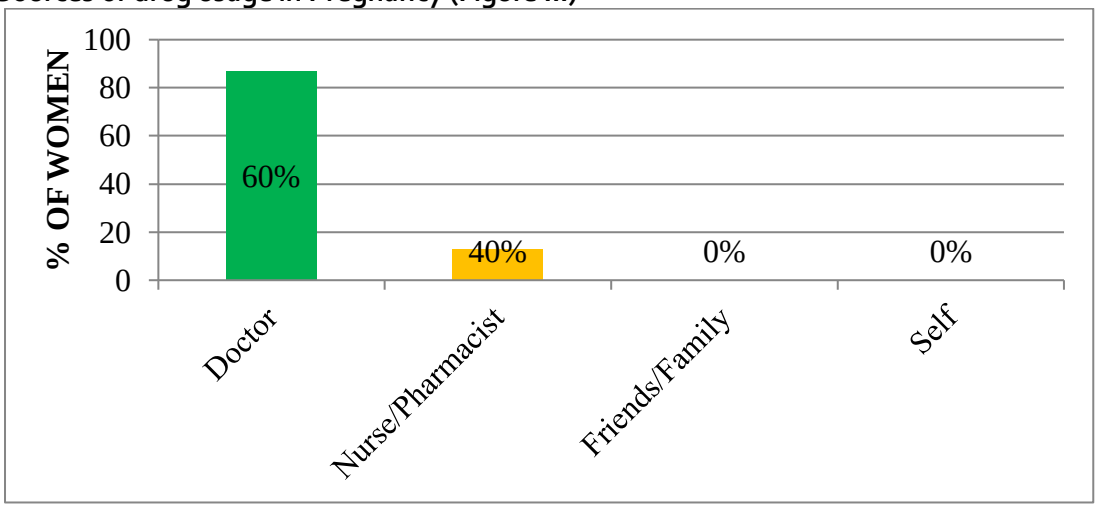
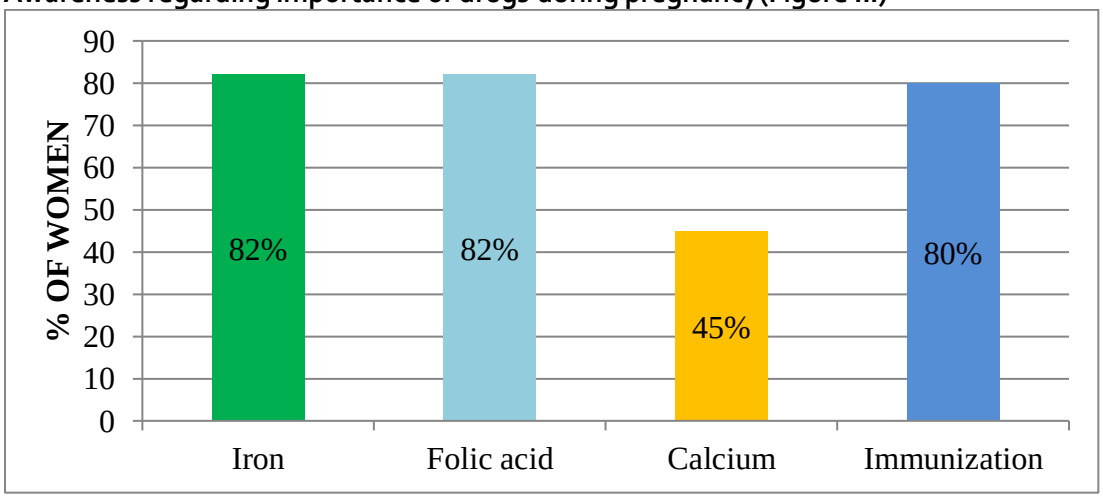
Awareness about harmfulness of drug use in pregnancy (Figure II)



Sources of drug usage in Pregnancy (Figure III)



Awareness regarding importance of drugs during pregnancy(Figure III)



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Results

A total of 420 pregnant women were interviewed, out of which 400 participants answered all the questions. So, the final sample consisted of 400 participants. Among these final participants, the average age of the participants was 25.7±2.68 years. Characteristics of study population has been shown in Table I.

Study population characteristics (Table I)

Parameter	Number of subjects (%)
Education status	
Illiterate	17
Literate	83
Elemental school	18
High school	24
Graduates	41
Socioeconomic status	
Low	20
Middle	57
High	23
Profession	
Housewife	78
Working	22

When enrolled for the study, all the patients were taking one or the other medicine. 80% were aware of the purpose for which they were taking medicines which includes anti-thyroid drugs, anti-diabetics, anti-epileptics, analgesics (paracetamol) while 20% didn't know their purpose for which they were taking medicines. About 78 % participants were aware that drugs can be harmful in pregnancy, 18% believed that drugs are always safe during pregnancy while 4% didn't have any knowledge. 82% were aware of the fact that essential supplemental drugs if prescribed by doctor, can be useful during pregnancy and they (82%) were aware that iron as well as folic acid are required during pregnancy while only 45% out of them knew about the usefulness of calcium during pregnancy. Most of them (80%) showed good compliance regarding usage of medicine. 80% knew that immunisation done during pregnancy is tetanus and they all complied to that. Regarding the source of information for drug use during pregnancy, 87% of the subjects were taking drugs as prescribed by physicians while 13% of the subjects referred to nurses or pharmacists. None of the patients took medicine by the advice of friends or family and none took medicine by herself as self-medication. In the present study, about 80% were aware about the need of regular antenatal check-ups and they were going for regular check-ups.

DISCUSSION

In the 1960s, thalidomide was identified as a significant birth defect cause, which generated concerns among women and healthcare professionals about the drugs' possible risks to the developing foetus and embryo. Contrarily, it's crucial to take prenatal medications including those for epilepsy, iron, folic acid, calcium, and other conditions to assist the mother and developing

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foetus. The goal of the current study was to evaluate pregnant women's knowledge of both.In our study, 17% of the cases had never attended school, 18% had only received a basic education, and 65% had completed education above high school. This information is comparable to research conducted by Abasiubong et al., in which a total of 9.9% of participants had no formal education, 19.5% had completed their elementary education, and 43.8% had completed their secondary education [22].Education and career, in particular, can have an impact on sociodemographic characteristics such as awareness of medication use during pregnancy. It has been demonstrated in a study by Zaki et al. that participants' opinions regarding drugs and their level of education and employment are significantly positively correlated [23]. 41% of women had a college degree, compared to 24% who had just completed high school. Although the education level in our study is lower than that in Zaki et al.'s study, in which 67.1% of participants had a college degree and 32.9% had only secondary and pre-secondary education, education level and occupation type have a greater impact on awareness of medicine usage. The majority of pregnant women in our study were educated above high school and resided in an urban area. This could be the reason that the majority of participants knew that drugs can be harmful to the foetus (70%) and most of them (60%) consulted doctors for medication, while 40% took advice of nurses/pharmacists which is not appropriate but none of them took medication by herself.In our study, 82% were aware of the fact that supplemental drugs if prescribed by doctor, can be useful during pregnancy and they (82%) were aware that iron as well as folic acid are required during pregnancy while only 45% out of them knew about the usefulness of calcium during pregnancy. In a study by Banzal et al, 74% of participants were taking iron and folic acid supplements. In comparison of these two studies, compliance to take prescribed medication was better in our study.About 30% of the participants in our study were unaware of the detrimental effects that drugs have on foetuses, but in a study by Banzal et al., more than 90% of the participants were unaware of these effects. In comparison of these two studies, awareness regarding the detrimental effects of drugs to the foetus was better in our study. The reason for that could be that only 16% had education above high school in study done by Banzal et al, whereas 65% had education above high school in our study [24].In this study along with studying awareness of drug usage in pregnancy, some guidelines were also given for the proper antenatal care in pregnancy (Appendix 2).

CONCLUSION

Although in the present study, the majority of women had sufficient knowledge & awareness regarding medication usage during pregnancy, still many didn't know about the harmful effects of drugs, the importance of regular ante-natal check-ups, immunization & compliance with the usage of essential supplemental medicines prescribed during pregnancy. Many women took medicines without a prescription from a registered medical practitioner.Hence, more education for pregnant women is needed regarding drug intake by pregnant women which should occur only after a physician's prescription. Awareness regarding regular ante-natal check-ups, compliance to essential supplemental medication & proper immunization is necessary during pregnancy for safer outcomes.

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